

## City of Alexandria, Virginia

## MEMORANDUM

DATE: APRIL 12, 2004

TO: THE HONORABLE MAYOR AND MEMBERS OF CITY COUNCIL

FROM: PHILIP SUNDERLAND, CITY MANAGER *PS*

SUBJECT: CONSIDERATION OF RESOLUTION REQUESTING STATE FUNDS FOR  
THE TRAFFIC SIGNAL SYNCHRONIZATION PROJECT

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**ISSUE:** Approval of resolution requesting State funds in the amount of \$193,000 for the Traffic Signal Synchronization Project. This allocation is required to utilize federal Congestion Mitigation and Air Quality (CMAQ) project funding.

**RECOMMENDATION:** That City Council adopt the attached resolution requesting State funding of \$193,000 (Attachment) and authorize the City Manager to:

- (1) Submit an agreement for the use of \$193,000 federal CMAQ funding to the Virginia Department of Transportation for the Traffic Signal Synchronization Project; and
- (2) Execute all necessary documents that may be required under this program.

**DISCUSSION:** This project represents a regional effort to optimize traffic signal operations, not only within individual localities, but also across jurisdictional boundaries. It represents a coordinated effort between regional traffic signal system managers to address the reality that improving operations locally, improves operations regionally.

The funding for this effort was based on an internal assessment of the City of Alexandria's traffic signals in 2003, which revealed that approximately 70 signalized intersections were in need of optimization. Other localities, such as Arlington County, the City of Fairfax, and the City of Falls Church conducted similar assessments of their traffic signal operations, which are the basis for their own funding allocations. Of the nine participating localities, the City of Alexandria was second to Arlington County in the number of signals that require optimization.

Currently, the City is on the verge of beginning a project that will analyze and optimize traffic signal operations in the Old Town area. Therefore, the scope of this project will include an assessment and optimization of traffic signal operations in areas west of Old Town. This area was chosen to complement other ongoing traffic signal optimization projects throughout the City to better integrate traffic signal operations. Ongoing traffic signal optimization projects include the Old Town Congestion Mitigation Project (Spring '04), Duke Street Congestion Relief Project (Fall '04, Route 1 Traffic Responsive Control (Spring '04 - Fall '04), and the Van Dorn Traffic Signal Optimization Project (Spring '04). The geographic area encompassed in the scope of this

project has been divided into three sub-areas, listed below, that will be analyzed and tied together for seamless coordination. These sub-areas were selected based on the proximity of the signals to each other, which will improve the optimization results. While the improvement of timing and phasing is the primary goal of this project, the study portion will highlight and confirm areas of concern; and create the opportunity for future small-scale roadway improvements.

#### Group 1

Beauregard Street Corridor

West King Street Corridor (Dawes Ave. to Park Center Dr.)

Seminary Corridor (Dawes Ave. to N. Jordan St.)

Howard & INOVA Hospital

Van Dorn Street Corridor (Kenmore Ave. to Braddock Rd.)

Braddock Road Corridor (Beauregard St. to N. Howard St.)

#### Group 2

West King Street Corridor (Menokin Dr. to Highland Pl.)

N. Quaker Lane Corridor (Seminary Rd. to Preston Rd.)

Braddock Road (Kenwood St. & Marlee Way)

Seminary/Janneys Corridor (St. Stephens to King St.)

#### Group 3

Braddock Road Corridor (Russell Rd. to Mt. Vernon Ave.)

W. Glebe Road Corridor (Valley Dr. to Commonwealth Ave.)

Mt. Vernon Corridor (Four Mile Rd. to Braddock Rd.)

Commonwealth Avenue Corridor (Glebe Rd. to Braddock Rd.)

Russell Road & Monroe Avenue

The plan for this project will consist of the following steps:

- (1) Traffic Volumes, Roadway Geometry, Parking Data, Bus Data Digital Photographs
- (2) Model Coding and Calibration
- (3) Signal Timing Plan Development (AM, Midday, & PM)
- (4) Implementation
- (5) Before & After Evaluation

The benefits of the project do not end with its completion. The data collection process will yield information that is transferable to many other City functions. This data will promote our continuing effort to organize a system of data related to traffic volumes, roadway geometry, parking, and transit operations that can either validate or supplement data collected by other City Divisions.

Furthermore, this data will be processed using Trafficware's Synchro modeling software. This is a widely accepted tool that has been used worldwide for the optimization of roadway networks. It provides detailed output through various measures of effectiveness (MOE) from delay time to

fuel emissions. It is also supplemented by SimTraffic, which creates a visual simulation of proposed network operations. Once the City network has been coded in Synchro, it will remain as a foundation for future timing and phasing adjustments for years to come. This software tool is also interoperable with the City's ACTRA system, which remotely monitors and controls our traffic signals.

This funding, which requires no local matching, will be primarily used to procure consultant services to assist in the data collection, analysis, and implementation. As a result, the consultant will produce a study report that will summarize the collected data, methodology & assumptions, and the before/after analysis.

In conclusion the proposed study will focus on the following objectives:

1. Identification and implementation of operational improvements;
2. Review and optimization of traffic signal patterns;
3. Development of additional timing plans;
4. Prioritization of locations for vehicle detection;
5. Development of plans and recommendations for parking zone durations and expansion
6. Recommendations for improved transit services; and
7. Identification of locations for pedestrian enhancements.

**FISCAL IMPACT:** The total budget for the Traffic Signal Synchronization Project is \$193,000. Federal CMAQ funding in the amount of \$193,000 is available from the State. There is no local matching requirement for this project.

**ATTACHMENT:** Resolution

**STAFF:**

Richard J. Baier, P.E., Director, T&ES

Thomas H. Culpepper, P.E., Deputy Director, T&ES

Robert Garbacz, P.E., Division Chief, Transportation, T&ES

William Haynes, P.E., City Traffic Signal Engineer, T&ES

Morgan Routt, Budget/Management, OMB

Carl Green, Division Chief, Administration T&ES

ATTACHMENT

RESOLUTION NO.

WHEREAS, in accordance with Virginia Department of Transportation allocation procedures, it is necessary that a request by City Council resolution be made in order that the Virginia Department of Transportation fund a Traffic Signal Synchronization Project in the City of Alexandria;

NOW, THEREFORE, BE IT RESOLVED by the City Council that the City Manager is authorized, for and on behalf of the City of Alexandria, hereafter referred to as the PUBLIC BODY, to execute and file an agreement with the Department of Transportation, Commonwealth of Virginia, hereafter referred to as the DEPARTMENT, for a grant of financial assistance in the amount of \$193,000 to defray the costs borne by the PUBLIC BODY for the development of the Traffic Signal Synchronization Project and to accept from the DEPARTMENT grants in such amounts as may be awarded, and to authorize the City Manager to furnish to the DEPARTMENT such documents and other information as may be required for processing the agreement request. The City Council certifies that the funds shall be used in accordance with the requirements of Section 58.1-638.A.4 of the Code of Virginia.

BE IT FURTHER RESOLVED, that the PUBLIC BODY is not required to provide any matching funds for this project, that the records of receipts of expenditures of funds granted the PUBLIC BODY may be subject to audit by the DEPARTMENT and by the State Auditor of Public Accounts, and that funds granted to the PUBLIC BODY for defraying the expenses of the PUBLIC BODY shall be used only for such purposes as authorized in the Code of Virginia. The undersigned duly qualified and acting as City Clerk of the PUBLIC BODY certifies that the foregoing is a true and correct copy of a Resolution, adopted at a legally convened meeting of the City Council held on the 27<sup>th</sup> day of April 2004.

ADOPTED: \_\_\_\_\_  
DATE

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WILLIAM D. EUILLE MAYOR

ATTEST:

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JACQUELINE M. HENDERSON, CMC CITY CLERK

RESOLUTION NO. 2102

**WHEREAS**, in accordance with Virginia Department of Transportation allocation procedures, it is necessary that a request by City Council resolution be made in order that the Virginia Department of Transportation fund a Traffic Signal Synchronization Project in the City of Alexandria;

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**BE IT FURTHER RESOLVED**, that the PUBLIC BODY is not required to provide any matching funds for this project, that the records of receipts of expenditures of funds granted the PUBLIC BODY may be subject to audit by the DEPARTMENT and by the State Auditor of Public Accounts, and that funds granted to the PUBLIC BODY for defraying the expenses of the, PUBLIC BODY shall be used only for such purposes as authorized in the Code of Virginia. The undersigned duly qualified and acting as City Clerk of the PUBLIC BODY certifies that the foregoing is a true and correct copy of a Resolution, adopted at a legally convened meeting of the City Council held on the 27th day of April 2004.

ADOPTED: April 27, 2004



WILLIAM D. EUILLE

MAYOR

ATTEST:



Jacqueline M. Henderson, CMC City Clerk